a weft direction like the direction of yarns in a woven fabric (weft and warp). As another example, the direction may be indicating natural features like neck, belly, and tail in animal skins.

[0024] In an implementation, the material data collection system includes a recolor feature. This may include converting the sample material swatch area into a grayscale layer; receiving selection of a base color; applying the base color to at least a portion of the grayscale layer, where the applied base color matches the intensity of an original color of the sample material swatch area in the base color.

[0025] In an implementation, the material data collection system includes metadata storage of color information. The metadata may include colors spaces different than the color space used in the captured image. This may include receiving selection of a first area from the sample material swatch area or the initial material sample image and a selected color space; translating, from a color at the first area, to a matching color identifier in the selected color space; and storing as metadata with the sample material swatch area or the initial material sample image the matching color identifier.

[0026] In an implementation, the material data collection comprises a capture guide, where the capture guide includes: an opening on a top surface of the capture guide, where the opening is surrounded by edges of the capture guide, and at least two alignment markers that are visible on the top surface of the capture guide. The material data collection includes a mobile device, capturing in a digital image at least a portion of the top surface of the capture guide and a sample material, where the digital image is processed to produce a material swatch based on the sample material and the at least two alignment markers. The digital image may include areas of the sample material appearing outside of the opening. Further, the digital image may include objects other than the capture guide or the sample material.

[0027] In an implementation, a capture guide includes a rectangular frame structure including an exterior edge and an interior edge, where the interior surrounds a perimeter of a rectangular first opening, a first corner of the rectangular frame structure, between the exterior edge and an interior edge, comprises a second opening, in a first direction at a first distance from the second opening, a first alignment structure is formed on an upper surface of the rectangular frame structure, in a second direction at a second distance from the second opening, a second alignment structure is formed on the upper surface of the rectangular frame structure, the second direction is transverse to the first direction; and a metal piece, coupled to the second opening. The second opening may be a circular shape. The first distance is the same as the second distance. The first alignment structure may include grooves formed on the upper surface of the rectangular frame structure and the grooves outline approximately a rectangle or square shape. The second alignment structure may include grooves formed on the upper surface of the rectangular frame structure, and the grooves outline a second rectangular shape, and the first and second rectangular shapes have the same area. The rectangular frame structure may include first ruled markings extending in the first direction and second ruled markings extending in the first direction.

[0028] In an implementation, the material data collection includes a method including receiving a digital image of a real-world material sample; analyzing the digital image to determine at least two marker areas found on a capture guide included with the digital image; correcting, based on the at least two marker areas, at least one of an alignment, color, or chromaticity of the digital image; and creating, after correcting the digital image, a cropped version of the digital image including: removing the capture guide from the cropped version of the digital image, identifying at least one pattern of the real-world material sample, and including the at least one pattern of the real-world material sample in the cropped version of the digital image. Including the at least one pattern may include receiving user input to determine the at least one pattern. A tiled image of an initial cropped version of the digital image may be generated to determine whether edges of the pattern match. The at least two marker areas may include at least three different colors and each of the at least two marker areas include the same colors. For example, there may be two different colors used for color correction and one color for brightness correction. These colors may be known before the photo was captured. For example, the capture guide may be manufactured or constructed with these colors predefined, so that these are known colors before the digital image is captured.

[0029] Other objects, functionality, and advantages of the present invention will become apparent upon consideration of the following detailed description and the accompanying drawings, in which like reference designations represent like functionality throughout the figures.

BRIEF DESCRIPTION OF THE DRAWINGS

[0030] FIG. 1 shows a simplified block diagram of a material data collection system implemented in a distributed computing network connecting a server and clients.

[0031] FIG. 2 shows a more detailed diagram of an exemplary client of the material data collection system.

[0032] FIG. 3 shows a system block diagram of a client computer system used to execute application programs such as a web browser or performance support tools for the material data collection system.

[0033] FIGS. 4-5 show examples of mobile devices, which can be mobile clients.

[0034] FIG. 6 shows a system block diagram of a mobile device.

[0035] FIG. 7 shows a block relationship diagram of various components of the material data collection system.

[0036] FIGS. 8A-8B show a sample flow of data collection by the material data collection system.

[0037] FIG. 9 shows an example of a sample material that is laid flat on a tabletop.

[0038] FIG. 10 shows a schematic of an example of a capture guide that may be used with the material data collection system.

[0039] FIG. 11 shows an example of a particular capture guide that may be used with the material data collection system.

[0040] FIG. 12 shows an example of another capture guide in an isometric view.

[0041] FIG. 13 shows the example of the other capture guide in a close-up view of a corner of the other capture guide.

[0042] FIG. 14 shows an example of a user holding a mobile device while orienting the mobile device.

[0043] FIG. 15 shows an example screen capture of the material data collection system in the calibration functionality.